Optical Access MonitorOnline User Manual

OTN Solutions for Metro/Regional and Long Haul



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Chapter I MonitorOnline Installation Prerequisites

The data management of MonitorOnline software is based on SQL_SERVER database. Therefore, SQL_SERVER database needs to be installed in advance to achieve the monitoring and recording of the entire system data.

Microsoft NET Framework 4.5 and database (SQL Server 2000 or SQL Server 2005 or SQL server 2008 or SQL server 2008R2 or SQL Server 2012 or SQL Server 2016 or SQL server 2017) must be set up before installing MonitorOnline software. The current mainstream databases are SQL Server 2008 and SQL server 2008R2.

SQL_SERVER Installation Environment

Operating System Requirements: according to the following table 1.0. Computer Configuration Requirements: 4-core CPU, 4G RAM or more, 500G disk space.

Operating System Name	64Bit	32Bit
WIN10	\checkmark	\checkmark
WIN8	\checkmark	\checkmark
WIN7	\checkmark	\checkmark
WINXP	\checkmark	\checkmark
WIN2003	\checkmark	\checkmark
WIN2000	\checkmark	\checkmark
WIN98	\	\
WIN95	/	\

Table.1.0 Operating System

Note: $\sqrt{}$: Supporting this system;

\: No such system.

Once Microsoft .NET Framework 4.5 and SQL_SERVER are installed, you can start to install MonitorOnline Management Software, and please noted the selection of language during installation.

1.1 Login SSMS

The network management software needs to connect the database remotely to implement the operation, so it is necessary to make the pre-connected database and open the remote function before running MonitorOnline software. The specific steps as following: Step One: Open SQL Server Management Studio and login as windows, then right click "SQL Server", choose "Properties" (see Fig.1.1).

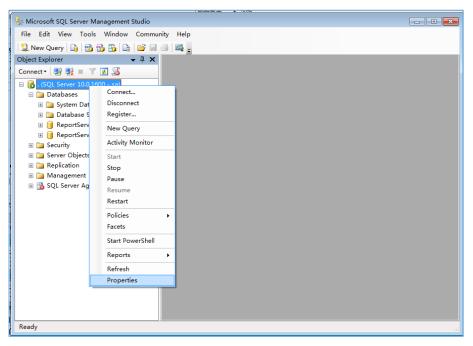


Fig.1.1 Microsoft SSMS

Step Two: After clicking "Properties", choose "Security" on the left, then choose "SQL Server and Windows Authentication mode" in Server authentication to enable hybrid login mode(see Fig.1.2).

Berver Properties - PC2015082613	29	
Select a page	🔄 Script 🔻 📑 Help	
Menory Menory Processors Security Database Settings Advanced Permissions	Server authentication • Windows Authentication mode • SQL Server and Windows Authentication mode Login auditing • None • Failed logins only • Successful logins only • Both failed and successful logins Server proxy account • Enable server proxy account Proxy account:	
Connection	Password: ####################################	
Server: Connection: 5a <u>Yiew connection properties</u>	Options — Enable Common Criteria compliance — Enable C2 audit tracing — Cross database ownership chaining	
Progress		

Step Three: Choose "Connections" on the left, check "Allow remote connections to this server", then click "OK" button (see Fig.1.3).

Server Properties - FSCOM-F	
Select a page General Memory Processors Security Connections Database Settings Advanced Permissions	Script
Connection	Remote server connections
Server: (local) Connection: sa IN View connection properties	Image: Allow remote connections to this server Remote guery timeout (in seconds, 0 = no timeout): 600 Image: Require distributed transactions for server-to-server communication
Progress Ready	Configured values Bunning values
	OK Cancel

Fig.1.3 Server Properties

Step Four: Unfold "Security"-> "Logins"-> "sa", then right click "sa" and choose "Properties" (see Fig.1.4).

Note: The user name can only be "sa", cannot be modified.

💯 Microsoft SQL Se	rver Management Studio				
File Edit View	Tools Window Commun	ity Help			
😫 New Query 📄	1 🔁 🔁 🔁 🕒 🔛 🖓	a 🕰 🛓			
Object Explorer	→ ‡ ×				
Connect • 🛃 💽	= Y 🖬 🔏				
😑 🚺 - (SQL Server	10.0.1600 - sa) ·				
🗉 📴 Databases					
🗉 🧰 System					
🗄 🛅 Databa					
III Report					
	ServerTempDB				
Security					
	45_PolicyEventProcessing				
	AS_PolicyTsqlExecutionLc				
	AUTHORITY/NETWORK :				
📥 NT	AUTHORITY\SYSTEM				
🌆 NT	SERVICE\MSSQLSERVER				
	SERVICE\SQLSERVERAGE				
	01508261329\Administra				
A வ	New Login				
🗉 🛄 Server	Script Login as 🔹				
E Crede Crypt	Policies +				
III 🔤 Crypt	Facets				
E Server	Start PowerShell				
E Server O					
🗷 🧰 Replicatio	Reports +				
4 H	Rename				
Ready	Delete				
	Refresh		0125	2015/9/1 22:23	7
2.168.0.223	Troperties				

Fig.1.4 Microsoft SSMS

Step Five: Choose "General" on the left, then choose "SQL Server authentication" on the right and set password, click "OK" button (see Fig.1.5).

🗄 Login Properties - sa				- • •
Select a page	Script 🔻 🚺 Help			
General Server Roles				
Tser Mapping	Login <u>n</u> ame:	5 a		S <u>e</u> arch
🚰 Status	💿 <u>W</u> indows authentication			
	SQL Server authentication			
	Password:	•••••	****	
	Confirm password:	*********	****	
	Specify old password			
	Old password:			
	Enforce password polic			
	Enforce password expir			
	User must change passw Mapped to certificate	ord at next Login		
	 Mapped to certificate Mapped to asymmetric key 			—
	Mapped to Asymmetric Rey			_
				▼ <u>A</u> dd
	Mapped Credentials	Credential	Provider	
Connection				
Server:				
Connection:				
58				
View connection properties				
Progress				
Ready				Remoye
The start of the s	Default <u>d</u> atabase:	master		-
	Default language:	English		•
			ОК	Cancel
				ai

Fig.1.5 Login Properties

Step Six: Choose "Status" on the left, choose "Grant" and "Enabled" on the right and click "OK" button (see Fig.1.6).

🗄 Login Properties - sa		
Select a page	Script 🔻 🚺 Help	
General Server Roles User Mapping Server	Settings Permission to connect to database engine:	
Connection		
Server:		
Connection: Sa		
Yiew connection properties		
Progress		
C Ready		
	ок	Cancel

Fig.1.6 Login Properties

Step Seven: Back to SQL Server Management Studio login interface, right click SQL Server, choose "Facets" (see Fig.1.7).

🍢 Microsoft SQ	QL Server Management Studio	- • •
File Edit Vi	'iew Tools Window Community Help	
New Query	y 🗅 🚯 📸 🕒 🔛 📨 🗔 🖂 📖 🚽	
Object Explorer		
Connect -		
	erver 10.0.1600 - sa)	
🕀 🧰 Da	Connect	
🕀 🚞 Se	Disconnect	
🕀 🚞 Se	Register	
. ⊕ 📄 Re . ⊕ 🛅 M	New Query	
⊞ 强 SC	Activity Monitor	
	Start	
	Stop	
	Pause	
	Resume	
	Restart	
	Policies	
	Facets	
	Start PowerShell	
	Reports +	
	Refresh	
	Properties	
· · ·		
Ready		.4

Fig.1.7 Microsoft SSMS

Step Eight: Choose "Server Configuration" from the drop-down box of "Facets" and set the properties of "Remote Access Enabled" as "true", then click "OK" button (see Fig.1.8).

Note: Now, SSMS has been set up. Exit first, then log in with "sa". If it is successful, it means the "sa" account is enabled. Otherwise, please check whether the network connection can be pinged. If the network connection is normal, please further confirm whether you followed the above steps.

View Facets - FSCOM-PC						
🕦 Ready						
Select a page	Script - In Help					
🚰 General						
	Facet: Server					
	-	he Conver albient				
	Description: Exposes properties of t	ne server object.				
	Facet properties:					
	AuditLevel	Failure				
	BackupDirectory	C:\Program Files\Microsoft SQL Server\MSSQL1				
	BrowserServiceAccount	NT AUTHORITY\LOCAL SERVICE				
	BrowserStartMode	Manual				
	BuildClrVersionString	v2.0.50727				
	BuildNumber	1600				
	Collation	SQL_Latin1_General_CP1_CI_AS				
	CollationID	872468488				
	ComparisonStyle	196609				
	ComputerNamePhysicalNetBIOS	FSCOM-PC				
	DefaultFile					
	DefaultLog	End of End of the Article				
	Edition EngineEdition	Enterprise Edition (64-bit) EnterpriseOrDeveloper				
	ErrorLogPath	C:\Program Files\Microsoft SQL Server\MSSQL1				
Connection	FilestreamLevel	Disabled				
	FilestreamShareName	MSSOLSERVER				
📑 (local) [sa]	InstallDataDirectory	C:\Program Files\Microsoft SOL Server\MSSOL1				
View connection properties	AuditLevel					
Progress	Gets or sets the audit level for the instance	e of Microsoft SQL Server.				
Ready		Export Current State as Policy				
		OK Cancel Help				

Fig.1.8 View Facets

1.2 Deploy SSMS

Step Nine: Open SQL Server Configuration Manager to start configuring SSCM, choose "SQL Server Services" on the left, please make sure the state of "SQL Server" and "SQL Server Browser" is running on the right (see Fig.1.9).

Note: It is usually necessary to reboot SQL Server after shutdown and restart, but SQL Server is still running after closing the SQL Server Configuration Manager program box.

File Action View Help						
SQL Server Configuration Manager (Local)	Name	State	Start Mode	Log On As	Process ID	Service T
SQL Server Services SQL Server Network Configuration (32bit)	🐞 SQL Server Browser		Other (Boot, Syste	NT AUTHORITY\LO	0	
SQL Native Client 10.0 Configuration (32)	SQL Server (MSS	Running	Automatic	NT AUTHORITY\NE	3632	SQL Serv
SQL Server Network Configuration	SQL Server Agent	Stopped	Manual	NT AUTHORITY\NE	0	SQL Age
SQL Native Client 10.0 Configuration	SQL Full-text Filte	Running	Manual	NT AUTHORITY\LO	380	
	🚯 SQL Server Analy	Running	Automatic	NT AUTHORITY\NE	3384	Analysis
	ntegr	Running	Automatic	NT AUTHORITY\NE	2712	
	SQL Server Repor	Running	Automatic	NT AUTHORITY\NE	2264	Report Se

Fig.1.9 SQL Server Configuration Manager

Step Ten: Choose "Protocols for MSSQLSERVER" under the node of SQL Server Network Configuration on the left. The default status of TCP/IP is Disabled (see Fig.1.10). Please set status of TCP/IP as "Enable" by right click or opening TCP/IP Properties interface by double click (see Fig1.11), then modify "active" to "yes", click "OK" button.

Note: TCP/IP protocol is generally enabled, and can be tested by ping.

🚡 Sql Server Configuration Manager			
File Action View Help			
SQL Server Configuration Manager (Local)	Protocol Name	Status	
SQL Server Services	Shared Memory	Enabled	
SQL Native Client 10.0 Configuration (32)		Disabled Disabled	
SQL Server Network Configuration SQL Server Network Configuration Server Network Configuration	VIA	Disabled	
SQL Native Client 10.0 Configuration			



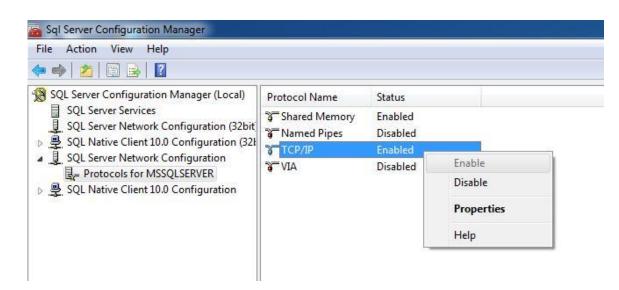


Fig.1.11 SQL Server Configuration Manager

Step Eleven: Right click "TCP / IP", select "IP Address" under "Properties" or double click to open the settings panel and select the "IP Address" tab, then set the port of TCP as "1433", and click "OK" button. (see Fig.1.12).

Step Twelve : Set TCP/IP of Client Protocols as "Enable" . (see Fig.1.13)

TCP/IP Properties	Sql Server Configuration Manager			
File Action View Help				
Protocol IP Addresses				
Protocol IP Addresses IP1 Active Yes Enabled No IP Address fe80::a049:766c:e02f:114c%14 TCP Dynamic Ports IP2 Active Yes Enabled No IP Address 192 Active Yes Enabled No IP Address 192.168.1.104 TCP Dynamic Ports TCP Port 1433 IP3 Active Yes Enabled No IP Address fe80::497d:5bc4:43ff:100f%12 TCP Port TCP Port TCP Port OK Cancel Apply Help 				

Fig.1.12 TCP/IP Properties

Fig.1.13 SQL Server Configuration Manager

Step Thirteen: Turn off the firewall or add SQL Serve.exe to the program list that allows the firewall to run. If you choose the latter, please open the firewall settings to add SQLServr.exe (C:\Program Files\Microsoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\Binn\sqlservr.exe) to the allowed list, the concrete steps are as follows:

- (1) Click the "start" to open control panel
- (2) Click "View network status and tasks" (see Fig.1.14)

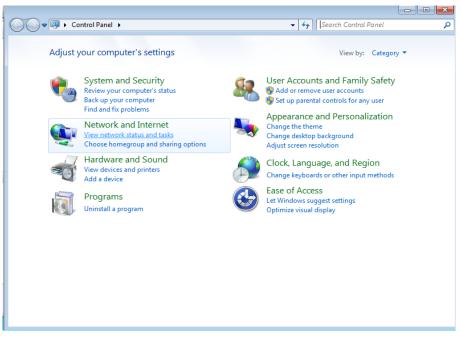


Fig.1.14 Control Panel

(3) Click "Windows Firewall" in Fig.1.15, the interface will pop up " (see Fig.1.16)

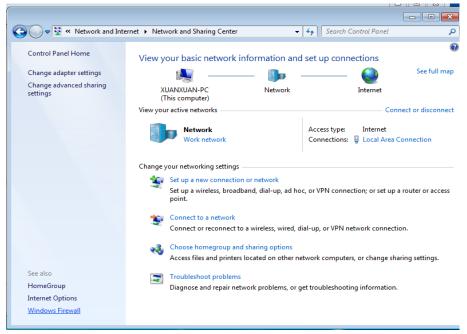


Fig.1.15 Network and Sharing Center

(4) Click "Allow a program of feature through Windows Firewall" (see Fig.1.16).

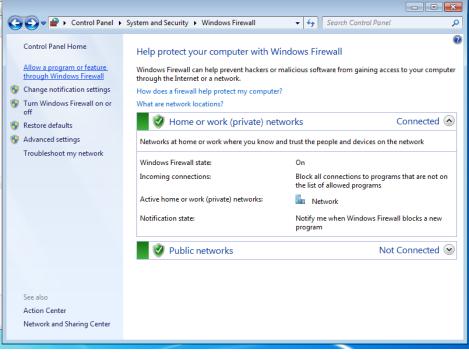


Fig.1.16 Windows Firewall

(5) Click "Changes settings" button and "Allow another program" button (see Fig.1.17). Then add "SQLServr.exe" to the list of allowed list according to the path "C:\Program Files\Microsoft SQL Server\MSSQL10.SQLEXPRESS\MSSQL\Binn\sqlservr.exe"

🚱 🕞 🖉 « Windows Firewall 🕨 Allowed Programs	👻 🍫 Search Control Panel	Q
Allow programs to communicate through Windows F To add, change, or remove allowed programs and ports, click Change What are the risks of allowing a program to communicate?		
Allowed programs and features:		
Name	Home/Work (Private) Public	
Distributed Transaction Coordinator File and Printer Sharing HomeGroup		1
☐ Homestop ☐ iSCSI Service ☐ Key Management Service		
Media Center Extenders Netlogon Service Network Discovery		
INTERVISION DISCOVERY IPerformance Logs and Alerts Ø Remote Assistance		
Remote Desktop Remote Event Log Management		
	Details Remove]
	Allow another program	
	OK Cancel	

Fig.1.17 Allowed Programs

(6) Click "Browse" and open Program Files folder in C (see Fig.1.18).

🔐 Browse								
🔾 🗢 🚢 🕨 Computer	► Local Disk (C:) ►	- ∮ y	Search Local Disk (C:)	٩				
Organize 🔻 New folder								
🔶 Favorites	Name		Date modified	Туре				
🧮 Desktop	🐌 OSFMount		9/4/2015 5:36 AM	File folder				
🗼 Downloads	퉬 PerfLogs		7/13/2009 8:20 PM	File folder				
🔛 Recent Places	퉬 Program Files		9/4/2015 5:43 AM	File folder				
B	퉬 Program Files (x86)		9/4/2015 5:43 AM	File folder				
🛜 Libraries 👘	퉬 Users		9/4/2015 7:35 PM	File folder				
Documents	퉬 Windows		9/4/2015 5:40 AM	File folder				
🚽 Music								
Pictures								
Videos								
Constant Sector								
Computer								
Local Disk (C:)								
VM DVD Drive (D:) VN 🔻								
File nar	me:	-	Applications (*.exe;*.com	;*.icd) ▼				
			Open 🚽 Ca	incel				
		_		1				

Fig.1.18 Local Dlisk C

(7) Open "Microsoft SQL Server" folder (see Fig.1.19).

Browse								
COO 🗢 🚺 « Local	Disk (C:)	Program Files	▼ ⁴ 7	Search Program Files	م			
Organize 🔻 New f								
🔆 Favorites	^ N	ame		Date modified	Туре 📩			
🧮 Desktop		Common Files		9/4/2015 5:06 AM	File fol			
鷆 Downloads		DVD Maker		7/14/2009 12:47 AM	File fol			
🕮 Recent Places		Internet Explorer		7/13/2009 10:37 PM	File fol			
		Microsoft Analysis Services		9/4/2015 5:43 AM	File fol			
🥽 Libraries		Microsoft SQL Server		9/4/2015 5:43 AM	File fol			
Documents		Microsoft Sync Framework		9/4/2015 5:42 AM	File fol			
J Music		Microsoft Visual Studio 9.0		9/4/2015 5:42 AM	File fol			
Pictures		Microsoft.NET		9/4/2015 5:41 AM	File fol			
🛃 Videos		MSBuild		7/13/2009 10:32 PM	File fol			
		Reference Assemblies		7/13/2009 10:32 PM	File fol			
🖳 Computer		VMware		9/4/2015 5:06 AM	File fol			
🏭 Local Disk (C:)		Windows Defender		7/13/2009 10:37 PM	File fol 👻			
DVD Drive (D:) VM	▼ ◀	III			F.			
Fi	le name:		•	Applications (*.exe;*.com;*	.icd) 🔻			
				Open 🚽 Car	icel			

Fig.1.20 Program Files

(8) Open "MSSQL10.MSSQLSERVER" folder (see Fig.1.20). Then open "MSSQL" folder

Browse							
😋 🕞 🗢 📕 « Program	🕨 Microsoft SQL Server 🕨 👻 🍫	Search Microsoft SQL Server 👂					
Organize 🔻 New fold		:= - 1 🔞					
☆ Favorites	Name	Date modified Type					
📃 Desktop	Jan 80	9/4/2015 5:42 AM File folder					
🐌 Downloads	Jan 190	9/4/2015 5:41 AM File folder					
🕮 Recent Places	400	9/4/2015 5:41 AM File folder					
	MSAS10.MSSQLSERVER	9/4/2015 5:41 AM File folder					
🥃 Libraries 🗮	MSRS10.MSSQLSERVER	9/4/2015 5:43 AM File folder					
Documents	MSSQL10.MSSQLSERVER	9/4/2015 5:42 AM File folder					
J Music							
Pictures							
Videos							
Computer							
🕌 Local Disk (C:)							
DVD Drive (D:) VN	•	•					
File	me: 🗾 🗸 🗸	Applications (*.exe;*.com;*.icd) 🔻					
		Open 😽 Cancel					
		h.					

Fig.1.20Microsoft SQL Server

(9) Open "Binn" folder (see Fig.1.21).

🔐 Browse										
😋 🔾 🗢 📗 « MSSQ	L10.MSS	QLSERVER	MSSQL	، ۲	• • • •	Sec	arch MSSQ	L		Q
Organize 🔻 New f	older									0
🔆 Favorites	^ N	lame	^				Date mo	dified	Ту	pe
🧮 Desktop		Backup					9/4/2015	5:55 AM	Fil	e folder
〕 Downloads		🔓 Binn					9/4/2015	5:55 AM	Fil	e folder
🖳 Recent Places		DATA					9/4/2015	5:56 AM	Fil	e folder
		FTData					9/4/2015	5:55 AM	Fil	e folder
🥃 Libraries	=	Install					9/4/2015	5:42 AM	Fi	e folder
Documents		JOBS					9/4/2015	5:55 AM	Fil	e folder
J Music		🔓 Log					9/4/2015	6:03 AM	Fil	e folder
Pictures		🔓 repldata					9/4/2015	5:55 AM	Fil	e folder
Videos		🔓 Upgrade					9/4/2015	5:42 AM	Fil	e folder
🖳 Computer										
DVD Drive (D:) VI	▼ ₹			III		_				- F
Fil	e name:				•		lications (Dpen		n;*.icd Cancel	• (

Fig.1.21 MSSQL

(10) Double-click "sqlservr" (see Fig.1.22).

Browse					×
😋 🔾 🗢 🔰 « MSSC	λΓ)	Binn 🕨	- - - + + + + + + + + + +	Search Binn	م
Organize 👻 New f	olde			:≡ ▼ [
🔆 Favorites	-	Name	A	Date modified	Туре 🖍
🧮 Desktop		Templates		9/4/2015 5:43 AM	File fol
퉳 Downloads		DatabaseMail		7/10/2008 4:38 AM	Applic
🕮 Recent Places		DCEXEC		7/10/2008 4:38 AM	Applic
		💷 fdhost		7/10/2008 4:39 AM	Applic
ز Libraries	=	💷 fdlauncher		7/10/2008 4:39 AM	Applic
Documents		SQLAGENT		7/10/2008 5:31 AM	Applic
🌙 Music		SQLIOSIM		7/9/2008 3:45 PM	MS-D(≡
Pictures		🛃 SQLIOSIM		7/10/2008 5:31 AM	Applic
📑 Videos		💷 sqlmaint		7/10/2008 5:31 AM	Applic
		sqlservr		7/10/2008 5:31 AM	Applic
👰 Computer		sqlstubss		7/10/2008 5:31 AM	Applic
🏭 Local Disk (C:)		💷 xpadsi		7/10/2008 5:31 AM	Applic 👻
DVD Drive (D:) VI	Ŧ	•	III		P.
Fi	le na	me: sqlservr	•	Applications (*.exe;*.com;	*.icd) 🔻
				Open 🔽 Car	ncel

Fig.1.22 Binn

(11) Click "Add" button to add SQL Server Windows NT-64bit to "Allow Programs" (see Fig. 1.23).

Add a Program	x					
Select the program you want to add, or click Browse to find one that is not listed, and then click OK.						
Programs:						
Import and Export Data (32-bit) Import and Export Data (64-bit) Import and Export Data (64-bit) Internet Explorer Solution Services Configuration Manager Solution Solution Services Configuration Services Configuration Manager Solution Services Configuration Services Configuration Manager Solution Services	* E					
🔲 SQL Server Windows NT - 64 Bit	Ŧ					
Path: C: \Program Files \Microsoft SQL Server \MSSQL Browse						
What are the risks of unblocking a program?						
You can choose which network location types to add this program to.						
Network location types Add Cancel						

Fig.1.23 Add a Program

(13) The configuration is complete now. Please start SQL Server Management Studio and log in.

Note:

If you open SQL Server Management Studio before starting SQL Server and SQL Server Browser, you need to shut it down and then restart it.

Chapter ${f I\!I}$ MonitorOnline Installation Procedures

2.1 MonitorOnline Installation

Double-click MonitorOnline.exe or MonitorOnline.msi of MonitorOnline.exe folder to install MonitorOnline. Please keep going to the next step until the installation is successful (see Fig.2.1)

Note: Based on the software version in the CD.

Name	Date modified	Туре	Size
🗟 MonitorOnline.exe	17.6.2017 8:33	Application	612 KB
ở MonitorOnline.msi	17.6.2017 8:33	Windows Installer Package	13 065 KB

Fig.2.1

The Shortcut will be created after installing Monitor Online, as shown in Fig.2.2.



Fig.2.2 Monitor Online

2.2 Connect Database

Step 1: Double click Fig.2.2, and click "OK" button, the interface of database connection will pop up.

Step 2: Input IP address (Computer IP of installation database), Login name (Default as "sa") and Login password (password set when the database is installed) of database, and click **"Test"** button, if the database is existent and the connection is successful, then the box of database connection success will pop up. Please transfer to step 3. Otherwise, the an interface of establishing a database will pop up, please transfer to step 5.

Step 3: Click "OK" button, then click "Confirm" button. Then MAC address verification interface will pop up.

Step4: Click "Confirm" button, if the device IP is online, then login interface will pop up. Input correct login account and password and click "Login" button, then "Submit success" interface will pop up.

Step 5: Please click "OK" button, then the interface of database configuration will pop up.

Step 6: Input IP address (Computer IP of installation database), Login name (Default as "sa") and Login password (password set when the database is installed) of database, and click "Create" button to create a database. After creating database, the interface of "Submit success" will pop up.

Step 7: Click "OK" button, then the interface of database connection will pop up. The other steps are same with Step2.

Note: Both the initial login account and initial password of network management software are admin.

2.3 MonitorOnline Interface Instruction

MonitorOnline interface is shown in Fig.2.3.

Fiberstore FMT Optical Trans	oort Network Management System					- 0 - X
		onfiguration 🔥 Alarm management (🄰 Statistics 🛛 🎉 Data security	? Help 1		
to B C 🖬 🖬 🗊	ເ⊧ o ⊨ (2)				🖲 0 🌘	0 🔘 0
Network topology tree	Device topology 5					
Wuhan-1	Move 🔽 Drag 💾 🗨 G	150% - 6				
						Legend
Building A						- cogona
Miniaturized	ED					
■ OE03(3)						Emergency
						Serious
						
		Guang Gu				General
•	F	Building A				Normal
Device statistics 4		Building A	Bank			
Device name Count	<u>^</u>					Dorpped
Online unit 1						
Online OLP 1						
Online EDFA 1	=					
Online OEO 1 Alarm unit O						
Alarn unit 0						
Current alarm managemen	(7)					
Alarm level Alarm uni		Event description	Alarm source	Happen time	confirm time	Event state
Common event unit 1	OLP R2 generate power alar	0LP R2 generate power alarm	0LP2	13.3.2018 11:17		No handle
· · · · · · · · · · · · · · · · · · ·			04.10	10 0 0010 11-17		W. LJI.
admin 192.168.0.220 2018-0	3-13 11:47:55 (8)					

Fig.2.3 Fiberstore FMT Optical Transport Network Management System

System	Description
(Menu Bar	
	Search unit, by clicking the icon, you can search all the units in the LAN.
	Add unit, by clicking the icon, you can add unit.
	: Delete unit, by clicking the icon, you can delete the selected unit.
	Edit unit, by clicking the icon, you can edit some information of unit.
	• Add line card, by clicking the icon, you can add a line card for the unit.
② Shortcut bar	E : Delete line card, by clicking the icon, you can delete a line card of the unit.
	: Edit line card, by clicking the icon, you can edit some information of the unit.
	Exit system, by clicking the icon, you can close the current system.
	6 : Lock system, by clicking the icon, you can lock the current user.
	: Close/open alarm sound, by clicking the icon, you can close or open network management software alarm sound.

System	Description						
	• The number of emergency alarm.						
②Shortcut bar	0 : The number of serious alarm.						
	O : The number of general alarm.						
Note: To add unit or delete u	Note: To add unit or delete unit, please select the service room where the unit is located.						
③Net Topology Tree	See 5.2.						
Device Statistics	The numbers of units and business cards are presented in real time.						
⑤ View Display Area	Current alarm management interface, historical alarm management interface, history records, operation records interface and graphic topology are all presented in view display area.						
	Move : After selecting the this box, you can drag a selected unit icon.						
	\square Drag : After selecting the this box, you can drag all unit icons of the topology.						
6 Topology	💾 : Save topology, by clicking this icon, you can save topology.						
	€ Enlarge icon, by clicking the icon, you can enlarge all the icons of topology.						
	$oldsymbol{Q}$: Shrink icon, by clicking the icon, you can shrink all the icons of topology.						
⑦ Current alarm interface	You can view the current alarm information directly, and confirming, deleting, and processing the alarm information without viewing the alarm device.						
® Status Bar	(1) Presenting login account of current system. (2) Presenting local IP address. (3) Presenting local time.						

Chapter III System Configuration

Click "System Configuration" of menu bar (see Fig. 3.1), then the system configuration interface will pop up. There are several operations in system configuration, such as: add city, add room, add unit, edit and delete (see Fig. 3.2).

Fiberstore FMT Optical Transpor	rt Network Management System					
🗄 😻 System management 🛛 👸	User management 🛛 🔀 System co	nfiguration 🔥 Alarm management	🥝 Statistics 🛛 🥡 Data security	? Help		
	0				🔵 0 🔘 0 (0
Network topology tree	Device topology					
⊡-@ Wuhan-1						
Data Center Bank	🛛 Move 🖓 Drag 💾 🍳 🖯	150%				
💭 Building A						Legend
👜 📻 Guang Gu - 🕮 Miniaturized ED						
## OLP2(2) ## OEO3(3)						Emergency
·····## ()EU3(3)						
						Serious
		_				
						General
		Guang Gu				
						Normal
<→		Building A	Bank			
Device statistics			валк			Dorpped
Device name Count 🔶						
Online unit 1						
Online OLP 1						
Online EDFA 1						
Alarm unit 0						
Current alarm management						
Alarm level Alarm unit	Alarm name	Event description	Alarn source	Happen time		nt state
Common event unit 1		OLP R2 generate power alarm	0LP2	13.3.2018 11:17		lo handle
admin 192.168.0.220 2018-03-1		and the second second stress	000	12 2 0010 11.17	v	
Barrier 152:105:0:220 2010-03-1	AU AA(T)(UU					

Fig.3.1 Fiberstore FMT Optical Transport Network Management System

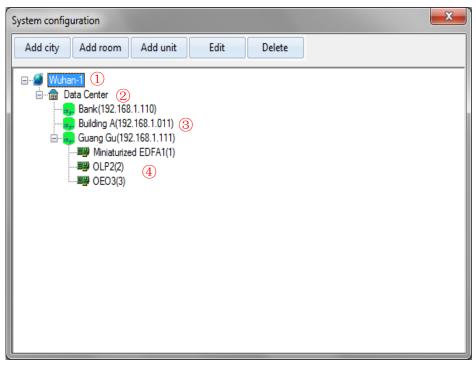


Fig.3.2 System configuration

Explain: ① represent city; ② represent serviceroom; ③ represent unit device name; ④ represent business card The name of the business card is in the slot where the card is located, for example: OEO(3)

3.1 Add City

Click "Add City" button in Fig.3.3 and "Edit City" interface will pop up (see Fig.3.4). Inputting city code and city description, then Click "Submit" button.

System configuration			×
Add city Add room Add ur	it Edit	Delete	
	1)		

Fig.3.3 System configuration

Edit city		X
City code	1	*
City description		*
Explain:		
	an fill in the number of (00~
999 !		
	Submit	
		H.

Fig.3.4 Edit city

Note: The city code and city description should fulfil requirements, and cannot be duplicated with other cities.

3.2 Add Room

Click "Add Room" button in Fig.3.3, then "Edit Room" interface will pop up (see Fig.3.5). You can add room by inputting room code and room description.

3.3 Add Unit

Click "Add Unit" button in Fig.3.3. It can only be added manually and distinguish it by between IP addresses. IP addresses can only be modified by button: Then the interface of add unit will pop up (see Fig.3.6). Inputting unit basic information, then Click "Submit" button. At the same time, the software will automatically refresh the number and type of cards in the added unit.

Edit room	Edit unit
Belong city XX Room code Room description Explain: Room code for 2 digit, can fill in the number of 00~99, such as 02 !	Unit Info IP address 192.168.1.111 Unit code 06 Unit description Building B Belong city Wuhan-1 Connecting unit Connecting unit Belong City Belong room Data Center Connecting Unit (192.168.1.110) Guideng A(192.168.1.110) Guideng A(192.168.1.111) Guideng A(192.168.1.111)
Submit Close	Submit Close
Fig.3.5 Edit room	Fig.3.6 Edit unit

3.4 Edit

You can edit information and property of city, room, unit and business card in Fig.3.3 (take edit business card for example). Click pre-edit room and click **"Edit"** button, then **"Edit room"** interface will pop up (see Fig.3.7).

	0				0 😑 99
Network topology tree	Device topology				
Wuhan	₩ More 🗇 Dag 💾 Q, Q, 100%				
실 주도에 이 가지 (11) 					Lege
Device statistics					
ce nose Crust line mit 1 line UZ 3 line URA 1 line SNA 2					
line MPA 1 line DPA 1 line SDA 2					
line mit I line fUP 3 line EDFA 1 line SDR 2 were mait 0 stalarm management level Alars mit 1	Aler san Bred bezigten to alian Decis alian	Aluen source WT-192.168.1.128	Happen time 2018/12/31 14:54	confirm time	Event stat Ho handl

Fig.3.7 Fiberstore FMT Optical Transport Network Management System

The Fig.3.8 is the interface of OEO edit board, and here you can modify the OEO basic information, transceiver's wavelength and rate.

E	dit board										×	
ſ	Board inform	nation										
	Board type	e	OEO		•							
	Belong city	у	Wuhan-1		•	Belong room	Da	ata Center 🔹 🔻	Belong un	it	Guang Gu 💌	
l	Board des	cription	OEO3			Board code			Belong slo	t	3	
	Port A1	Wavelengt	h	nm	Rate	Gb	/s	Service notes		_		1
l	Port A2	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
l	Port B1	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
l	Port B2	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
l	Port C1	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
l	Port C2	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
l	Port D1	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
	Port D2	Wavelengt	h	nm	Rate	Gb	/s	Service notes				
											Submit Close]

Fig.3.8 Edit board

The Fig.3.9 is the interface of OLP edit board, and here you can edit basic information, topology information. The main and backup cable description of OLP can be modified.

TXEDFA: Add EDFA on the TX side of OLP

T1EDFA: EDFA Add EDFA on the T1 side of OLP

T2EDFA: EDFA Add EDFA on the T2 side of OLP

RXEDFA: EDFA Add EDFA on the RX side of OLP

R1EDFA: EDFA Add EDFA on the R1 side of OLP

R2EDFA: Add EDFA on the R2 side of OLP

Edit board					X
Board information					
Board type	OLP 🔹				
Belong city	Wuhan-1 💌	Belong room	Data Center 🔹	Belong unit	Guang Gu 🔹
Board description	OLP2	Board code		Belong slot	2
Topology information					
Description of main r	rounte				
Description of secon	nd rounte				
Connect board	None selected 🔹	None selected	 None select 	ed 🔹 None selec	cted 👻
TXEDFA	None selected 🔹	None selected	▼ None select	ed 🔹 None selec	cted 🔻
T1EDFA	None selected 🔹	None selected	▼ None select	ed 🔹 None selec	cted 💌
T2EDFA	None selected	None selected	 None select 	ed 🔹 None selec	cted 💌
RXEDFA	None selected	None selected	 None select 	ed 🔹 🔹 None selec	cted 💌
R1EDFA	None selected	None selected	▼ None select	ed None select	cted 💌
R2EDFA	None selected 🔹	None selected	▼ None select	None select	cted 👻
				ſ	
					Submit Close

Fig.3.9 Edit board

The Fig.3.10 is the interface of EDFA edit board, and here you can edit basic information, topology information. The up even board and down even board of the EDFA can be selected according to the actual situation of the link.

Edit	board	
Bo	pard information	
	Board type	Miniaturized EDFA 🔻
	Belong city	Wuhan-1 💌 Belong room Data Center 💌 Belong unit Guang Gu 💌
	Board description	Miniaturized EDFA1 Board code Belong slot
T	opology information	
I	Up even board:	None selected None selected None selected
	Down even board:	None selected None selected None selected None selected
F	Reference input value	Reference output value
		Submit Close

Fig.3.10 Edit board

3.5 Delete

You can delete city, room, unit and board card in Fig.3.3 (take unit for example). Then you can delete unit by clicking "OK" button. Click pre deleted unit and click "Deleted" button, then "Edit room" interface will pop up (see Fig.3.11).

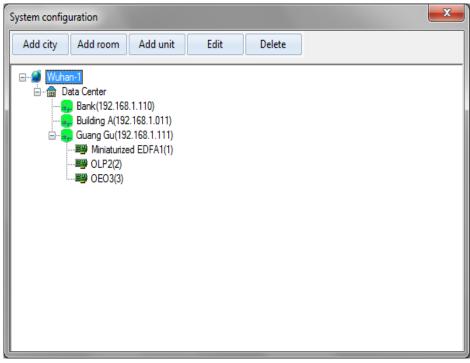


Fig.3.11 System configuration

Chapter IV Software Security

4.1 User Management

Click "User Management" of menu bar in Fig.4.1, then an interface of user management will pop up (see Fig.4.2). There are several operations in user configuration, such as: add user, edit user, delete user and query user as shown in Fig.4.2.

Fiberstore FMT Opt	tical Transport	Network Management System					
🤅 🔊 System manage	ement 🎆 Us	ser management 🛛 🔀 System cor	nfiguration 🔥 Alarm management	🥝 Statistics 🛛 🧊 Data security	? Help		
to B 🗹 🖬		0				🖲 0 🥥	0 🔵 0
Network topo	ology tree	Device topology					
B-S Wuhan-1 ⊟-⊜ Data Cent	ter	🖉 Move 🗹 Drag 💾 Q Q	150% •				
							Legend
🗄 - 📻 Guang	g Gu						
	Iniaturized ED LP2(2)						Energency
	EO3(3)						Litergency
							Serious
							Serious
			₹ ₽				General
			Guang Gu				
							Normal
<Ⅲ	•		Building A	Bank			1.0.1
Device statis							Dorpped
Device name Cou							
	1						
	1 =						
Online OEO	1						
Alarm unit	0						
Current alarm mar	nagement						
	Alarm unit	Alarm name	Event description	Alarn source	Happen time	confirm time	Event state
Common event	unit 1	OLP R2 generate power alarm	OLP R2 generate power alarm	0LF2	13. 3. 2018 11:17		No handle
C		01.0 78	010 77	9410	10 0 0010 11-17		w. tn. *
admin 192.168.0.22	20 2018-03-13	11:47:55					

Fig.4.1 Fiberstore FMT Optical Transport Network Management System

User mana	agement				X				
	User query			User operation					
	Login account			Add					
	User type None selected 💌 Delete								
		Query		Edit					
	User type	Login account	User name	Phone	Password				
▶ 1	Administrator	admin	admin	12345678921	admin				
Total	1 Pages 🔀 🤇		otal 1 Records	Every j	page 30 Records				

Fig.4.2 User Management

4.1.1 Add User

Click "Add" button in Fig.4.2, the interface of user adding will pop up (see Fig.4.3). Selecting user type and inputting login account, user name and phone number, then click "Confirm" button.

4.1.2 Edit User

Click "Edit" button in Fig.4.2, the interface of user editing will pop up (see Fig.4.4). Then you can edit user type, login account, user name and phone number.

User editing	User editing
Vser type None selecteć ▼ *	User type Administrator → *
Login account *	Login account admin *
Password *	Password admin *
User name *	User name admin *
Phone	Phone 12345678921
Confirm Cancel	Confirm Cancel
Fig 4.2 Lloor aditing	Fig 1 1 User editing

Fig.4.3 User editing

Fig.4.4 User editing

Note: User types include administrators, operators, browsers, and they have different permissions.

Administrators have all permissions; Operators just can not operate user management; Browsers only has permission to view, no delete permission; Customers need to choose user type according to their needs.

4.1.3 Delete User

Click "Delete" button in Fig.4.2, the interface of user deleting will pop up (see Fig. 4.7), then click "Ok" button to delete user.

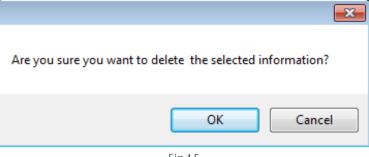


Fig.4.5

Note: The user of login account is admin that cannot be deleted and modified.

4.1.4 Query User

You can query user in Fig4.2 and the query condition includes:

- (1) User information: Input login account and click "Query" button, then the login account with the input login account information will be displayed.
- (2) User type: Click "User type" to select administrator, operator and browser to view user information.

4.2 System Management

System management menu items include modify password, switch user, lockking system, setting interval time of record, exit (see Fig.4.6).

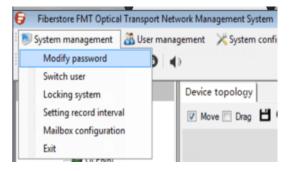


Fig.4.6 Fiberstore FMT Optical Transport Network Management System

4.2.1 Modify Password

Click **"M**odify password" in Fig.4.6, then an interface of change password will pop up (see Fig.4.7). Inputting original password and new password, then click **"Confirm**" button to complete the modification.

4.2.2 Switch User

Click "Switch user" in Fig.4.6, then an interface of switch user will pop up (see Fig.4.8). Inputting user name and password, then click "Login" button. MonitorOnline login user name is the user name of the switch user.

4.2.3 Locking System

Click "Lockking system" in Fig.4.6, then an interface of locking system will pop up (see Fig.4.8). Inputting user name and password, you can unlock it and log in again.

Change password	_	×-	🚽 Login	-
Login account	admin			^{verstore} MT Optical Transport Network
User name	admin			anagement System
Old password	· · ·	-		
New password	· · ·	-	User name:	None selected
Confirm new password	· · ·	-	Password:	
Confirm	Cancel			Login Quit
EL 1 3 01				





4.2.4 Setting Record Interval

Click "Setting record interval" in Fig.4.6, then an interface of setting record interval will pop up. You can set interval of EDFA, OLP,OEO. The specific operational records of OEO and EDFA will be covered in Chapter 7.

4.2.5 Exit System

Click "Exit" in Fig.4.6, then you can exit current system.

Chapter V System Monitoring

5.1 Network Management Card





Panel Keys Description

Definition	Кеу	Description
•	Scroll Up Key	The key is used to change the menu or data up.
▼	Scroll Down Key	The key is used to change the menu or data down.
Þ	Scroll Right Key	The key is used to move the cursor right when in modification state.
٩	Scroll Left Key	The key is used to move the cursor left when in modification state.
(OK)	ОК	Confirm key, the key is used to enter into the submenu or confirm the modification. Enter this key to modify
(Esc)	Esc	Quit key, the key is used to exit the current menu level or to exit the modification state.

Table 4-1 Panel keys description

5. 2 Network Topology Tree

In each newly created database, the initial login management must establish the network topology tree to monitor the device. The database does not delete the network topology tree and will keep recording it. Network topology tree is located on the left of main interface (see Fig.5.2). You can see all cities, engine rooms, units and the type and number of cards of each network element.. Double click the card icon to enter the chassis monitoring interface (see Fig.5.4).

5.3 Equipment Topology

Device topology is in view display area of main interface (see Fig 5.3), and you can see all states of device. means normal, means offline, means emergency alarm, means serious alarm, means general alarm). Double click unit icon of equipment topology to open an interface of chassis monitoring interface(see OEO monitoring interface in Fig.5.4).

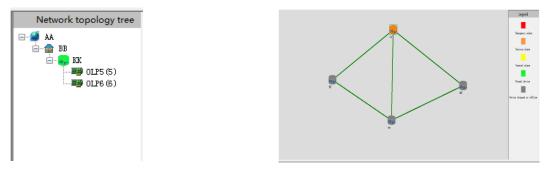


Fig.5.2 Network topology tree

Fig.5.3 Equipment topology

OEO card:

Double-click OEO card, then pop up an interface of card monitoring (see Fig.5.4). You can see monitor information, topology information and basic information of OEO in Fig 5.4.

The monitoring information includes:

(1) Basic information of each transceiver on OEO card (wavelength, transmission distance, Tx & Rx power, temperature and rate).

(2) The illumination control mode and working mode of the OEO.

2.168.1.140AA	_	A commence			-			
	Dk		82 C1 C2 D	D2 Sloti				PAN PWR Status (
onitor Info Topology in Working parameters	nformation B A1	asic information	B1	B2	C1	C2	D1	D2
Tavelength	1591	1310						IM
ransmission distanc	80.00	20.00						Кл
input power	-50.00	-40.00						dB
lutput Power	-8.14	-5.13						dB
odule temperature	31.78	10.30						°C
late	2.50	1.25						G/
Gervice notes								
Control mode	pen 👻	Open 👻	No selecte 👻	No selecte +	No selecte 👻	No selecte 👻	No selecte 👻	No selecte -
	set	set	set	set	set	set	set	set
Work model 1	set	Loopback n -	No selecte -	No selecte -	No selecte -	No selecte -	No selecte -	No selecte -
aput alarm threshol.								

Fig.5.4 OEO card information

Note1: When set up the light control mode of OEO via Monitor Online, there will be a certain delay, this is caused by a large amount of data of OEO.

Note2: For 8G transceivers, please save the FC setting according to the following steps: first, click "set" to choose "FC", then, click "send". For the other transceivers, just set the normal mode.

EDFA card:

You can see monitor information, topology information and basic information of EDFA in Fig 5.5.

Description of EDFA's main parameters:

Input power & Output power: Real-time monitoring can be realized;

Gain adjustment: Adjustment range between ± 3db;

Output adjustment: AGC mode is default;

Lower limit value of input and upper limit value of output: Adjust according to the demand.

Pump: Pump2 of the mid-stage EDFA also has monitoring parameters.

92.108.1.1048	the second s			
NMU ⊕ PyWE1 → PyWE2 → RUN Esc				FAN PWR Status
Ethemet	Slot3			
onitor Info Topology information Basic information				
Up even board:	Down even board:			
Gain 0.00 dB Module temperature 32.1 °C	Punp1		Punp2	
Sain 0.00 an monule temperature Sc. 1 C	Pump1 electricity	0.0	mA Pump2 electricity	nÅ
Supply voltage 4.72 V Work model AGC	Punp1 power	0.00	dBm Pump2 power	dE
	Pump1 temperature	25.0	°C Pump2 temperature	°C
Input power -50.00 dBm Output Power -50.00 dBm	Pump1 cooling electricity	53.0	mA Pump2 cooling electricity	ni
	Upper pumpi temperature	30.0	°C Upper pump2 temperature	°C
Low input power $-31.00~dBm$. Low output power $-5.00~dBm$	Low pump1 temperature	20.0	°C Low pump2 temperature	°C
	Upper module temperature	70.0	'C	
Input warning threshold dBm Output warning threshold dBm	Low module temperature	-55.0	°C	
Gain adjustment 27.50 set Output power adjustment	Pumpi state Op	en [Close Pump2 state	

Fig.5.5 EDFA card information

OLP card:

You can see monitor information, topology information and basic information of OLP in Fig 5.6.

Description of OLP's main parameters:

Power value: the left data is the real-time monitoring parameter, and the right data is the alarm threshold;

Switching Threshold: When the current power of the fiber is lower than the threshold, the switch switches immediately.

Change back delay: Switch back to the original line after a delay;

Change delay: Switch to the alternate line after a delay;

Working parameters: Mainly divided into manual and automatic modes, generally using automatic mode.

	OE ()	P02/P					Slot5	DEO PW RU						51ot6	
	⊕ €	PWR PWR	Auto Pri R1 TX R2 L3 Mo	e Status ^{RX}	O O Tx R1	0 0 0 T1 R2 T2	and the state of the	DUP PWR RUN ARM	● Auto ● P ● R1 ● T ● R2 ● L1	Mode Sta	tus Rx	0 0 0 Tx F1 T3	0 0 0 R2 T2	Slot8	
						0	₽ _								
onitor Info To This Chinawy	pology inform hanoptionOLP7	ation I	asic inform	tion OLP1:1A					Renote					-	-
		(m		×										_
	-2	3. 24				Main	n -					-			-
			T2												
						Seco	bne								
						Seco	md								
4		RX	R1 -50			Seco Mair						_			_
		RX	R1 -50 R2 -50			Mair	i.					_			
-			R1 -50 -50 LP				i Ind				OLP	_			?
Fower value	na álarn thr	-	R1 -50 R2 -50	am		Mair	nd Power	value	ne Alerm	thrashol	C	hange pa	ran		_
Fower value Fower valu R1 -50.00	ue Alarm thr	-	R1 -50 -50 LP		d-50.00	Mair	nd Power		ue Alarm	threshol	d C	hange pa		-1 d	54
Power valu		eshold	RI -50 -50 LP Change par	Threshol		Wair	end Power P		ue Alarm		d s s		Thresh		59
Power valu R1 -50.00	-20.00	eshold set	RI -50 -50 LP Change par Switching	Threshol Threshol		Mair Seco	end Power P R1		ue Alsrm	set	d s s	witching	Thresh Thresh	514	1
Power valv R1 -50.00 R2 -50.00	-20.00	eshold set set	LP Change par Switching Switching	Threshol Threshol delay	d-30.00	Mair Seco set set	end Power P R1 R2		us Alarm	set set	d : S : S	witching witching	; Thresh ; Thresh :k delay	514	se
Power value R1 -50.00 R2 -50.00 TX -23.24 LS Working param	-20.00 -20.00 -20.00	eshold set set set set	LP Change par Switching Switching Changebao Change	Threshol Threshol & delay delay	d -30.00 1 0	Mair Seco Set Set Set Set	end Power P R1 R2 TX LS			set set	d : 5 : 5 : 0	witching witching Changebao Change	; Thresh ; Thresh ik delay delay	514	5 e 5 e
Power value R1 -50.00 R2 -50.00 TX -23.24 LS Working param	-20.00 -20.00 -20.00 eters Work model	eshold set set set set	-30 -30 -50 LP Change par Switching Switching Changebac Change	Threshol Threshol & delay delay	d -30.00 1 0	Mair Secc Set Set Set Set	end Power P R1 R2 TX LS	wer val		set set	d C : S : S : C : Work	witching witching Changebac Change channel	; Thresh ; Thresh ik delay delay	514	se se
Power value R1 -50.00 R2 -50.00 TX -23.24 LS Working param	-20.00 -20.00 -20.00	eshold set set set set	LP Change par Switching Switching Changebao Change	Threshol Threshol delay delay Bi	d -30.00 1 0	Wair Secc Sect Set Set Set	end Power P R1 R2 TX LS	wer val	neters	set set	d : 5 : 5 : 0	witching witching Changebao Change	; Thresh ; Thresh ; delay delay	51 d	5 e 5 e

Fig.5.6 OLP card information

Chapter VI Alarm Management

Alarm management: Device alarm query and alarm type configuration.

6.1 Current Alarm Management

The alarm management of menu bar includes current alarm management, historical alarm management and alarm configuration. The interface of current alarm management is shown in Fig.6.1.

Device to	opology Current alarm m	nanagemer×					
Confirm	alarm Clear alarm	No need handle					
	Alarm level	Alarm name	Event description	Alarm source	Happen time	confirm time	Event state

Fig.6.1 Device topology

Note: Current alarm information must be confirmed and then cleared. The current alarm that is confirmed and cleared will be transferred to historical alarm.

The interface of current alarm management contains confirm alarm, clear alarm and no need handle. Right-clicking the

selected current alarm also can realize all the above functions as well as view device.

Confirm alarm: Confirm the selected current alarm information.

Clear alarm: Clear the selected current alarm information and transfer it to the historical alarm.

No need handle: Transfer alarm information that does not need to be processed to historical alarms.

View device: Jump directly to the alarm device.

6.2 Historical Alarm Management

Related D	levice		Alarm name None selected Record tin	e 2018/01/29 2018/01/31			Qu	uery Export	t Clear
	Alarn level	Alarn unit	Alarm name	Event description	Alarn source	Happen time	confirm time	Clear time	Event stat
2	Common event	00	OLP R2 generate power alarm	OLP R2 generate power alarm	0LP2	31. tannikuuta 2018 18:58:41			No handl
3	Common event	00	OLP Ri generate power alarm	OLP R1 generate power alarm	0LP2	31. tannikuuta 2018 18:58:41			No handl
4	Common event	00	EDFA output alarm	EDFA output alarm	Miniaturized EDFA3	31. tannikuuta 2018 18:58:33			No handl
5	Common event	00	EDFA input alarm	EDFA input alarm	Ministurized EDFA3	31. tannikuuta 2018 18:58:33			No handl
6	Common event	00	Device online	Device online	00	31. tannikuuta 2018 18:58:32			No handl
7	Common event	00	Device dropped	Device dropped	00	31. tannikuuta 2018 12:27:52			No hand
8	Common event	00	Optical module A2 is pulled out	Optical module A2 is pulled out	0E01	31. tannikuuta 2018 12:27:08			No hand
9	Common event	00	Optical module Al is pulled out	Optical module A1 is pulled out	0E01	31. tannikuuta 2018 12:27:08			No hand
10	Common event	00	Optical module C1 is pulled out	Optical module C1 is pulled out	OE01	31. tannikuuta 2018 12:27:00			No hand
11	Common event	00	Optical module C2 is pulled out	Optical module C2 is pulled out	0E01	31. tannikuuta 2018 12:27:00			No hand
12	Common event	00	OLP R2 generate power alarm	OLP R2 generate power alarm	OLP4	31. tannikuuta 2018 12:25:48			No hand
13	Common event	00	OLP Ri generate power alarm	OLP R1 generate power alarm	OLP4	31. tannikuuta 2018 12:25:48			No hand
14	Common event	00	OLP TX generate power alarm	OLP TX generate power alarm	OLP2	31. tannikuuta 2018 12:25:41			No hand
15	Common event	00	Optical module A2 of OEO generate input alarm	Optical module A2 of OEO generate input alarm	0E01	31. tannikuuta 2018 12:23:29			No hand
16	Common event	00	Optical module A1 of OEO generate input alarm	Optical module A1 of OEO generate input alarm	0E01	31. tannikuuta 2018 12:23:29			No hand
17	Common event	00	OLP H2 generate power alarm	OLP R2 generate power alarm	OLP2	31. tannikuuta 2018 12:23:29			No hand
18	Common event	00	OLP R1 generate power alarm	OLP R1 generate power alarm	0LP2	31. tannikuuta 2018 12:23:29			No hand
19	Common event	00	OLP TX generate power alarm	OLP TX generate power alarm	OLP4	31. tannikuuta 2018 12:23:28			No hand
20	Common event	00	R1 change threshold of OLP is set	R1 change threshold of OLP is set	OLP4	31. tannikuuta 2018 12:21:19			No hand
21	Common event	00	R2 change threshold of OLP is set	R2 change threshold of OLP is set	0LP4	31. tannikuuta 2018 12:19:51			No hand
22	Common event	00	R1 change threshold of OLP is set	R1 change threshold of OLP is set	OLP4	31. tannikuuta 2018 12:19:41			No handl
23	Common event	00	Automatic back delay time of OLP is set	Automatic back delay time of OLP is set	OLP2	31. tannikuuta 2018 12:19:00			No hand

Fig.6.2 History alarm

You can query, clear and export historical alarm information in Fig.6.3. The explanation of query condition includes:

- (1) Related equipment: Input the related name of the pre-query history alarm and click query button(see Fig.6.3), then all the alarm information that is related to query will be displayed.
- (2) Alarm name: Click the alarm name, select the alarm type (see Fig 6.3), and click the "Query" button, then all the alarm information of the selected alarm name will be displayed.

Device to	pology History aları×										
Related D	Device Alam name Device of	online	Record tim	e 2018/01/31 [- 2018/01/31				Query	Export	Clear
	Alarm level	Alarm unit A	Alarn name	Event description	Alarm source	Happen time	confirm time	Clear time	Even	it state	
▶ 1	Connon event	00 D	evice online	Device online	00	31. tennikuuta 2018 18:58:32			Ne	o handle	
2	Common event	00 D-	levice online	Device online	00	31. tanmikuuta 2018 12:10:57			N	o handle	
3	Common event	00 D	levice online	Device online	00	31. tanmikuuta 2018 11:57:55			N	o handle	

Fig.6.3 History alarm

(3) Record time: Choose the start date and end date of the pre-query, and click the "Query" button, then all alarm information of selected time period will be displayed (see Fig.6.4).

ated Der	nce	/	None selected Record tin	ne 2018/01/31 🐨 - 2018/01/31 🐨			4	ery Export	t Clea
	Alarn level	Alarm unit	Alarm name	Event description	Alarn source	Happen time	confirm time	Clear time	Event stat
1	Connon event	00	OLP TX generate power alarm	OLP TX generate power alarm	0LP2	31. tammikuuta 2018 18:58:41			No handle
	Connon event	00	OLP R2 generate power alarm	OLP R2 generate power alarm	0LP2	31. tammikuuta 2018 18:58:41			No handl
	Connon event	00	OLP R1 generate power alarm	OLP R1 generate power alarm	0LP2	31. tammikuuta 2018 18:58:41			No handl
	Connon event	00	EDFA output alarm	EDFA output alarm	Ministurized EDFA3	31. tammikuuta 2018 18:58:33			No handl
i i	Connon event	00	EDFA input alarm	EDFA input alarm	Miniaturized EDFA3	31. tammikuuta 2018 18:58:33			No handl
;	Connon event	00	Device online	Device online	00	31. temmikuuta 2018 18:58:32			No handl
	Connon event	00	Device dropped	Device dropped	00	31. tammikuuta 2018 12:27:52			No handl
	Connon event	00	Optical module A2 is pulled out	Optical module A2 is pulled out	0E01	31. tammikuuta 2018 12:27:08			No handl
	Connon event	00	Optical module A1 is pulled out	Optical module A1 is pulled out	0E01	31. tammikuuta 2018 12:27:08			No handl
0	Connon event	00	Optical module C1 is pulled out	Optical module C1 is pulled out	0E01	31. tammikuuta 2018 12:27:00			No handl
1	Connon event	00	Optical module C2 is pulled out	Optical module C2 is pulled out	0E01	31. tammikuuta 2018 12:27:00			No handl
2	Connon event	00	OLP R2 generate power alarm	OLP R2 generate power alarm	0LP4	31. tammikuuta 2018 12:25:48			No handl
3	Common event	00	OLP R1 generate power alarm	OLP R1 generate power alarm	0LP4	31. tammikuuta 2018 12:25:48			No handl
4	Connon event	00	OLP TX generate power alarm	OLP TX generate power alarm	0LP2	31. tammikuuta 2018 12:25:41			No handl
5	Common event	00	Optical module A2 of OEO generate input alarm	Optical module A2 of OEO generate input alarm	0E01	31. tammikuuta 2018 12:23:29			No handl
6	Connon event	00	Optical module A1 of OEO generate input alarm	Optical module A1 of OEO generate input alarm	0E01	31. tammikuuta 2018 12:23:29			No handl
7	Common event	00	OLP R2 generate power alarm	OLP R2 generate power alarm	0LP2	31. tammikuuta 2018 12:23:29			No handl
8	Connon event	00	OLP R1 generate power alarm	OLP R1 generate power alarm	0LP2	31. tammikuuta 2018 12:23:29			No handl
9	Connon event	00	OLP TX generate power alarm	OLP TX generate power alarm	0LP4	31. tammikuuta 2018 12:23:28			No handl
								-	-

6.3 Alarm Configuration

Fig.6.4 History alarm

Choose event level of every event type and click submit button to configure each alarm level. At the same time, selecting the alarm level that you need to push(see Fig.6.5).

	Event type	^
		1
2	Device online	
з	Nmu restore factory default configuration	
4	NMU open key	
5	NMU close key	
6	NMU open buzzer	
7	NMU close buzzer	
8	NMU open fan control switch	
9	NMU close fan control switch	
10	NMU open fan	
11	NMU close fan	
12	NMU open power1	
13	NMU open power2	-
<		

Fig.6.5 Alarm configuration

Chapter VII Statistics

Statistics: Record the historical data of the equipment card. When the line encounters problems, you can check statistics to figure out the failure time and the reason of failure quickly. Statistics in the submenu only contain four types of products: OEO, EDFA, mid-stage EDFA and OLP.

7.1 History Record

The statistics menu includes history record submenu and operation record submenu. The history interface of EDFA is shown in Fig.7.1.

_															
De	vice topolo	gy Histo	ory alarm Histo	ory record of ED \times											
	Cit	y name	Room name	Related Device	IP address	Board description	Input power	Output Power	Pump electricity	Pump temperature	Pump power	Cooling el			
													Related De	vice None se	elected 🔻
													Related boa	ard None se	elected 🔹
													- Start time		
													Day	2018/01/31	
													Hour	0	*
													Minute	0	-
													Second	ls 0	×
													End time		
													Day	2018/01/31	
													Hour	0	-
													Minute	0	*
													Second	s 0	*
													Record typ	Common	record 💌
•					III							÷.	Query	Export	Clear
	Total 0	Pages	< < 0	> > Total	0 Recon	ds					Every page 3	0 Records			

Fig.7.1 History Record

You can query, export and clear history record in Fig.7.1. The query condition includes:

- (1) Related equipment: Input the related equipment name, then click the "Query" button to check out the history record of the related equipment.
- (2) Record time: Choose the start date and end date of the pre-query and click the "Query" button, then all history record of selected time period will be displayed(see Fig.7.2).

Device topology	History alarm	FDFA	Operation reco >	<						
Related Device		Record time	2018/01/31		1 🔍			Query Export		Clear
		Record time				Operation type	Related Device		Ope	rator
Total 0 P	ages 🔣 🧹	0 > > Tot	tal 0 Records					Every page	30	Records

Fig.7.2 Operation record

7.2 Operation Record

The operation record interface of EDFA is shown in Fig.7.3. You can query operation record according to the related equipment and the record time. At the same time, you can export, query and clear operation record.

Related Dev	Vice Record time 2015/01/01	- 2018/01/31	Query Export	Clear
	Record time	Operation type	Related Device	Operator
> 1				
2	31. tannikuuta 2018 12:30:16	Vser exit		admin
3	31. tannikuuta 2018 12:21:19	Ri change threshold of OLP is set		admin
4	31. tannikuuta 2018 12:19:51	R2 change threshold of OLP is set		admin
5	31. tannikuuta 2018 12:19:41	Ri change threshold of OLP is set		admin
6	31. tannikuuta 2018 12:19:00	Automatic back delay time of OLP is set	00	admin
7	31. tannikuuta 2018 12:18:39	Automatic back delay time of OLP is set	00	admin
8	31. tannikuuta 2018 12:18:07	Automatic back delay time of OLP is set		admin
9	31. tannikuuta 2018 12:16:17	Automatic back delay time of OLP is set	00	admin
10	31. tannikuuta 2018 12:11:23	Light emitting control way of OEO module C1 is set to open	00	admin
11	31. tannikuuta 2018 12:10:30	User login		admin
12	31. tannikuuta 2018 12:10:02	User exit		admin
13	31. tannikuuta 2018 12:01:41	Add board		admin
14	31. tannikuuta 2018 11:57:55	Add board	00	admin
15	31. tannikuuta 2018 11:57:55	Add board	00	admin
16	31. tannikuuta 2018 11:57:55	Add board	00	admin
17	31. tannikuuta 2018 11:57:49	Add unit		admin
18	31. tannikuuta 2018 11:57:28	Delete unit		admin
19	31. tannikuuta 2018 11:56:57	Add room		admin
	ALL IN A AND ALMA A	1111 12		

Fig.7.3 Operation record

Chapter VIII SNMPv1

8.1 About SNMPv1

General		Get-Bulk	. settings
Read community		Use 0	äet-Bulk
public	•	0	Non repeaters
Set community		10	Max repetitions
private	•	SNMPv3	3 security
Fimeout [s] 5		F	curity name
Retransmits 4		Security	lovel
Port number 161	1 🔻		10 Y CI

Fig.8.1 SNMP Protocol Preferences

Note: The default version is SNMPv1. FS can also offer the customized service according to customers' different demands.

Read community: It's similar to the password function, if you need to read the data, you only need to write the "Read community" correctly. The password can only be modified via the Simple Management Tool.

Set community: It's similar to the password function, if you need to modify the data, you need to write the "Read & Set community" correctly. The password can only be modified via the Simple Management Tool.



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